

WHAT IS CLAIMED IS:

1. A gateway for connecting networks of different types,  
for connecting a first network and a second network which uses  
a signal format different from that of the first network, said  
5 gateway comprising:

a conversion section which converts a signal used in the  
first network to a signal to be used in the second network, and  
a signal used in the second network to a signal to be used in  
the first network, when communication is performed between a  
10 terminal connected to the first network and a terminal connected  
to the second network;

a detection section which detects conversion-process  
information containing at least one of the time said conversion  
section spent to convert the signal and the amount of data  
15 converted; and

a network-connecting section which is connected to at least  
one of the first and second networks and which transmits the  
conversion-process information to a fee-charging system of the  
first network or a fee-charging system of the second network.  
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2. The gateway according to claim 1,  
wherein said conversion section converts at least one of  
a call-control signal generated by call-connection signaling,  
an audio signal generated by an audio CODEC and a video signal  
25 generated by a video CODEC.

3. The gateway according to claim 2,  
wherein said conversion section comprises  
a signaling gateway unit which converts the call-control  
30 signal and

a media gateway unit which converts the audio signal and  
the video signal,

wherein said detecting section detects the

conversion-process information used in a conversion process in the media gateway unit.

4. The gateway according to claim 2 or 3,  
5 wherein the conversion of the call-control signal is conversion between a Q.931 signal and an SIP signal,  
the conversion of the audio signal is conversion between an AMR bit stream and a G.723.1 signal, and  
the conversion of the video signal is conversion between  
10 an MPEG4 bit stream and an H.263 signal.

5. A system for charging fees for communication between networks of different types, said system comprising:

a first terminal which performs a call control;

15 a second terminal which responds to the call control performed by the first terminal;

a first network to which the first terminal is connected;

a second network to which the second terminal is connected;

and

20 a gateway which connects the first network and the second network,

wherein:

the first network and the second network use different signal formats;

25 the first network comprises a fee-charging system;

the gateway converts a signal from the first network to a suitable signal for the signal format of the second network and transmits the signal to the second network, converts a signal from the second network to a suitable signal for the signal format  
30 of the first network and transmits the signal to the first network, detects conversion-process information containing at least one of the time spent to convert the signal and the amount of data converted, and transmits the conversion-process information to

the fee-charging system, in order to accomplish communication between the first terminal and the second terminal; and

the fee-charging system performs a fee-charging process in accordance with the conversion-process information, to charge  
5 a fee on a user of the first terminal.

6. The system according to claim 5,  
wherein the gateway detects the conversion-process information after the first terminal and the second terminal  
10 have been connected to each other.

7. The system according to claim 5,  
wherein the gateway detects the conversion-process information about at least one of a signal generated by an audio  
15 CODEC and a signal generated by a video CODEC.

8. A method of charging fees for communication between networks of different types, comprising the steps of:

connecting a first network and a second network using a  
20 signal format different from that of the first network, by means of a gateway which converts a communication signal from a first terminal connected to the first network, to a suitable signal for the signal format of the second network and converts a communication signal from a second terminal connected to the  
25 second terminal, to a suitable signal for the signal format of the first network;

detecting conversion-process information containing at least one of the time spent to convert a signal and the amount of data converted, said signal having been transmitted after  
30 the first terminal and the second terminal have been connected to each other, by the gateway;

transmitting the conversion-process information to a fee-charging system of the network to which the first or second

terminal that is a calling side is connected, by the gateway;  
and

charging a fee on a user of the calling-side terminal,  
said fee being fixed or calculated on the basis of communication  
5 time, based on the conversion-process information, by the  
fee-charging system.

9. The method according to claim 8,  
wherein the conversion-process information includes at  
10 least one of the time spent to convert signals in an audio CODEC  
and video CODEC and the amount of data converted therein.